

REMARKS

Upon entry of the present Amendment claims 1-3, 5-10 and 12-32 will be pending, claims 4 and 11 will have been canceled without prejudice or disclaimer, and claims 1, 5-7, 9, 10, 12, 13, 15-19, 23 and 30 will have been amended to further clarify the claimed subject matter. Applicants have amended independent claims 1, 6 and 19, as set forth herein, to expedite prosecution, and have amended claims 5, 7, 9, 10, 12, 13, 15-18, 23 and 30 for enhanced clarity. However, Applicants submit that the amendment should not be construed as an admission to the propriety of the Examiner's rejections. Applicants respectfully submit that the application, including all pending claims, is in condition for allowance.

Applicants note with appreciation the Examiner's consideration of the documents cited in the Information Disclosure Statement filed on February 19, 2002 in the present application. Applicant thanks the Examiner for returning, with the afore-noted Office Action, an initialed and signed copy of the PTO-1449 Form that accompanied the February 19, 2002 Information Disclosure Statement. Applicants also note with appreciation the Examiner's consideration and acceptance of the drawings filed on November 16, 2001.

In the afore-noted Official Action, the Examiner rejected claims 6-9, 11, 13-16, 19-26, 28 and 30-32 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,514,207 to Shahram Ebadollahi *et al.* (hereinafter referred to "EBADOLLAHI"). The Examiner rejected claims 1-5, 10, 12, 17, 18 and 29 under 35 U.S.C. 103(a) as being unpatentable over EBADOLLAHI in view of U.S. Patent No. 6,938,029 to Allan Y. Tien (hereinafter referred to "TIEN"). The Examiner rejected claim 27 under 35 U.S.C. 103(a) as being unpatentable over EBADOLLAHI alone. Applicants respectfully traverse all

rejections for at least the reasons set forth below.

Applicants respectfully submit that EBADOLLAHI does not teach or suggest, *inter alia*, "an inserting code segment that inserts at least one time-mark into video upon receiving input from a user, the at least one time-mark capable of being inserted into the video real-time during a medical procedure while the video is being recorded and post procedure; an associating code segment that associates an index with the at least one time-mark, data capable of being input into the index real-time during a medical procedure and post-procedure during review; and an extracting code segment that extracts at least one portion of the video starting at a predetermined period of time before the at least one time-mark and ending at a predetermined period of time after the at least one time-mark", as recited in, for example, independent claim 1.

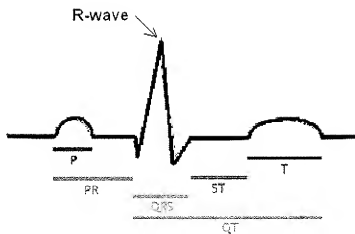
Likewise, EBADOLLAHI does not teach or suggest, *inter alia*, "an inserting code segment that inserts at least one time-mark into the video, the at least one time-mark capable of being inserted into the video real-time during the medical procedure while the video is being recorded and post procedure; an associating code segment that associates an index with the at least one time-mark; an extracting code segment that extracts at least one portion of the video at the at least one time-mark, wherein the at least one portion begins before the at least one time-mark and ends after the at least one time-mark; a concatenating code segment that concatenates the extracted at least one portion of video together with at least another portion of video into a shortened summary video clip", as recited in, for example, independent claim 6.

Further, EBADOLLAHI does not teach or suggest, *inter alia*, "at least one input device that inserts at least one time-mark into the video, the at least one time-mark

capable of being inserted into the video real-time during the medical procedure while the video is being recorded and post procedure; and at least one workstation that associates an index with each time-mark, extracts at least a portion of the video at the at least one time-mark beginning before and ending after the at least one time-mark, concatenates the at least one portion of the video with at least another portion of video into a shortened summary video clip, and stores both the video and summary video clip into a searchable database", as recited in, for example, claim 19.

It is unclear from the outstanding Office Action whether the Examiner has attempted to equate the claimed time-mark to EBADOLLAHI's "key frame" or "time marker 152." Nonetheless, under either interpretation, the EBADOLLAHI patent fails to teach or suggest, *inter alia*, the afore-noted subject matter recited in, for example, independent claims 1, 6 and 19.

If the Examiner is attempting to equate EBADOLLAHI's Key Frame to the claimed time-mark, this assertion is erroneous for at least the following reason. The R-waves in EBADOLLAHI are not inserted into the video by a program segment, but are instead recorded electric impulses received from a patient. For example, as described at column 6, line 62 *et seq.*, EBADOLLAHI implements algorithms that take advantage of the heart's periodic nature to determine when the patient's heart is in its most expanded state. Specifically, EBADOLLAHI detects the R-wave peaks (defined by EBADOLLAHI as the "first upward deflection of the QRS complex," see column 6, lines 23-25) in a QSR complex signal that is received from a patient undergoing an echo study. As illustrated in the below figure, which was attained from an online Wikipedia and modified to show the R-wave portion, the Key-Frame Selector 30 of EBADOLLAHI detects the R-waves of received QSR



Source: Wikipedia at http://en.wikipedia.org/wiki/QRS_complex

complex signals using the process shown, for example, in FIG. 2. EBADOLLAHI then uses the key frames to build “static” summaries, which are a collection of individual key frames, or “dynamic” summaries, which are a collection of short video sequences – each including a video frame sequence for a single heart cycle and including two consecutive key frames (see EBADOLLAHI at column 4, lines 36-49).

On the other hand, if the Examiner is attempting to equate EBADOLLAHI’s “time marker 152” to the claimed time-mark, this interpretation is also erroneous for at least the following reason. EBADOLLAHI’s system does not associate an index to the time marker 152, and does not extract at least one portion of the video at the time marker 152, wherein the at least one portion begins before the time marker 152 and ends after the time marker 152, as recited, for example, in independent claims 1, 6 and 19, and concatenate the extracted portions into a shortened video clip, as recited in, for example, independent claims 6 and 19. As described at column 7, line 15 *et seq.* of EBADOLLAHI, the time marker 152 is an image refresh signal for refreshing an ECG waveform. EBADOLLAHI uses the time marker 152 as a reference point to detect key frames by counting the

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number of R-waves detected in a previous sweep cycle (e.g., to the right of the time marker 152 in FIG. 3(b)) and comparing the detected number to a number of R-waves detected in a current sweep cycle (e.g., to the left of the time marker 152 in FIG. 3(b)), and when the number of new R-waves exceeds the number of R-waves in a previous sweep cycle (e.g., "YES" at Step 142 in FIG. 2 of EBADOLLAHI), an R-wave peak is identified. Further, as described, for example, at column 8, line 25 *et seq.*, EBADOLLAHI centers the time marker 152 as a centroid in the determination of the key frame. Then, EBADOLLAHI uses the determined key frames as reference points for monitoring a recognition feature via View-Boundary Detector 40 in FIG. 1. However, EBADOLLAHI does not associate an index to the time marker 152. Moreover, if EBADOLLAHI records a "dynamic" summary of a heart-cycle, including two consecutive key frames, the consecutive key frames are both located in the current sweep, which is illustrated as being left of the centroid time marker 152 in FIG. 3(b). See e.g., EBADOLLAHI at column 7, lines 28-51 and column 8, lines 45-58. This does not constitute extracting at least one portion of the video at the time mark, wherein the at least one portion begins before the time mark and ends after the time mark.

Moreover, claims 7-9, 11, 13-16, 20-26, 28 and 30-32 depend from claims 6 and 19 directly or indirectly and are patentably distinguishable for at least the reasons provided above with respect to claims 6 and 19, as well as for additional reasons related to their own recitations. Thus, Applicants submit that the Examiner has not established a *prima facie* case of anticipation, and respectfully request reconsideration and withdrawal of the Section 102 rejections of claims 6-9, 11, 13-16, 19-26, 28 and 30-32 as being anticipated by EBADOLLAHI.

TIEN teaches a system for indexing recordings of observed and assessed phenomena by presenting pre-defined descriptors or measurement questions to a user and automatically storing observations associated with measurement items. Applicants submit TIEN fails to compensate for at least the afore-noted deficiencies of EBADOLLAHI. For example, even if one were to attempt to combine EBADOLLAHI and TIEN as suggested by the Examiner (Applicants submit that such a combination would not have been obvious), the combination would fail to teach or suggest, *inter alia*, "the at least one time-mark capable of being inserted into the video real-time. . ." as recited, for example, in each of independent claims 1, 6 and 19.

It appears that the Examiner has used impermissible hindsight in attempting to combine EBADOLLAHI and TIEN. Applicants submit that one of ordinary skill in the art would not have been motivated to attempt to combine EBADOLLAHI and TIEN as suggested by the Examiner. EBADOLLAHI is primarily concerned with automatically indexing and summarizing echo videos so as to allow a user to view a summary of the echo study of a patient without having to view a full study (*see* EBADOLLAHI at column 2, lines 7-17). The Examiner's proposed combination of TIEN with EBADOLLAHI goes against the intent of EBADOLLAHI. Particularly, TIEN requires time-consuming, manual viewing and indexing of video (*e.g.*, TIEN at column 2, line 59 to column 3, line 17), whereas EBADOLLAHI, as described at column 2, lines 7 to 17, explicitly intends minimal user involvement in generating "static" and/or "dynamic" video segments. The combination of EBADOLLAHI and TIEN would not teach or suggest inserting at least one time-mark that is capable of being inserted into the video real-time as is required by each claims 1, 6 and 19.

Moreover, claims 2, 3, 5, 10, 12, 17, 18, 27 and 29 depend from claims 1, 6 and 19 directly or indirectly and are patentably distinguishable for at least the reasons provided above with respect to claims 1, 6 and 19, as well as for additional reasons related to their own recitations. Thus, Applicants submit that the Examiner has not established a *prima facie* case of obviousness, and respectfully request reconsideration and withdrawal of the Section 103 rejections of claims 1, 2, 3, 5, 10, 12, 17, 18, 27 and 29 as being unpatentable over EBADOLLAHI alone, or in combination with TIEN.

In view of the amendments and remarks contained herein, Applicants respectfully request reconsideration and withdrawal of each of the outstanding rejections together with allowance of all the claims pending in the present application. Such action is respectfully requested and is now believed to be appropriate.

SUMMARY AND CONCLUSION

In view of the foregoing, it is submitted that the Examiner's rejections under 35 U.S.C. §§ 102(e) and 103(a) in the Office Action dated July 3, 2006, have been overcome and should be withdrawn. The present Reply is in proper form, and none of the references teach or suggest applicant's claimed invention. Accordingly, Applicants request timely allowance of the present application.

Applicants note that this response is being made to advance prosecution of the application to allowance, and no acquiescence as to the propriety of the Examiner's rejections is made by the present response. All amendments to the claims which have been made in this Reply, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Should the Commissioner determine that an extension of time is required in order to render this response timely and/or complete, a formal request for an extension of time, under 37 C.F.R. §1.136(a), is herewith made in an amount equal to the time period required to render this response timely and/or complete. The Commissioner is authorized to charge any required extension of time fee under 37 C.F.R. §1.17 to Deposit Account No. 19-0089.

Should the Examiner have any questions, please contact the undersigned at the telephone number provided below.

Respectfully submitted,
Hayk ESENYAN et al.



William Pieprz
Reg. No. 33630

Bruce H. Bernstein
Reg. No. 29,027



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GREENBLUM & BERNSTEIN, P.L.C.
1950 Roland Clarke Place
Reston, VA 20191
(703) 716-1191